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Evaluation of the 2007 Speed Enforcement Program (SEP)

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Illinois Department of Transportation Division of Traffic Safety Evaluation Unit

The Evaluation Unit within the Division of Traffic Safety in the Illinois Department of Transportation (IDOT) focuses on evaluation and monitoring of various highway safety projects and programs in Illinois. The Evaluation Unit conducts research and analyses that enhance the safety and efficiency of transportation by understanding the human factors that are important to transportation programs in Illinois. The main functions of the Unit include the following:

- 1. Develop an in-depth analysis of motor vehicle related fatalities and injuries in Illinois using several crash related databases (Crash data, FARS, Trauma Registry, and Hospital data, state and local police data).
- 2. Develop measurable long term and short term goals and objectives for the Highway Safety Program in Illinois using historical crash related databases.
- 3. Evaluate each highway safety project with enforcement component (e.g., Speed, Traffic Law Enforcement Program, Local Alcohol Program, IMaGE projects) using crash and citation data provided by local and state police Departments.
- 4. Evaluate several highway safety programs (e.g., Occupant Protection and Alcohol). This involves evaluating the effects of public policy and intervention programs that promote safe driving.
- 5. Design and conduct annual observational safety belt and child safety seat surveys for Illinois. This survey is based on a multi-stage random selection of Interstate Highways, US/IL Highways, and several local and residential streets.
- 6. Provide results of research and evaluation as well as annual enforcement activities to the National Highway Traffic Safety Administration (NHTSA) as part of the Federal Requirements of State Highway Safety Program in Illinois.
- 7. Provide statistical consultation to other Sections at the Division of Traffic Safety and other Divisions at IDOT.
- 8. Publish results of all research and evaluation at the Division and place them as PDF files at IDOT's Website.

This report provides a descriptive evaluation of the Speed Enforcement Program (SEP) during the FFY 2007. A total of 48 local police agencies participated and conducted comprehensive speed enforcement activities for six months. The main goal of the speed program was to reduce incidents of speeding which is a major contributing factor in motor vehicle related injuries and fatalities.

The report was compiled and prepared by the Evaluation staff. Comments or questions may be addressed to Mehdi Nassirpour, Ph.D., Chief of Evaluation Unit, Bureau of Administrative Services, Division of Traffic Safety, Illinois Department of Transportation, 3215 Executive Park Drive, Springfield, IL 62794-9245.

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Executive Program Summary

In FY 2007, the Division of Traffic Safety (DTS) developed the Speed Enforcement Program (SEP) in order to increase speed enforcement activities in communities where speeding is a significant contributing factor in fatal and injury crashes. It has been shown that highly visible enforcement programs focusing on speed violations offer the greatest potential for changing unsafe driving behaviors. A total of 48 county and local police agencies participated in the SEP program. Campaigns were to run six months from September 2006-August 2007 in four different locations per agency. Results of pre and post speed surveys among 48 participating agencies show a reduction in the average speed after speed enforcement activities. The following materials include results of the SEP campaign.

Enforcement

- During the speed campaign 48 county and local police agencies logged a total of 32,150 hours and wrote a total of 65,229 citations, 53,229 (81.6%) were speed citations.
- On average, law enforcement wrote one citation every 29.6 minutes. Eleven agencies met the objective of writing one speed citation every 30 minutes.

Cost Effectiveness

- A total cost of enforcement activities among 48 local agencies was \$1,539,661.43. The average cost per patrol hour was \$46.33.
- The average cost per citation was \$24.42 and the average cost per speed citation was \$29.05. The cost per citation ranged from \$13.87 in Ottawa to \$47.45 in Winnebago County.

Media

 Media efforts were critical to the success of the grant. A public information and education campaign were included in the grant specifications. A total of 1,889 media efforts were conducted in coordination with the SEP. These efforts included press conferences, radio and television news stories, distribution of posters and fliers, banners, or web announcements.

Results of Pre and Post Surveys

- Overall results of pre and post speed surveys among 48 participating agencies show a reduction in the average speed after speed enforcement activities. The average speed reduction ranged from 1.05 MPH among roads with a speed limit of 45 MPH to 2.7 MPH among roads with a speed limit of 35 MPH.
- As expected the average observed speed among the majority of road segments selected for enforcement during pre survey was about 4.5 MPH higher than the posted speed limit categories. For example the average speeds for those road segments with posted speed limits of 30 MPH, 35 MPH, and 45 MPH were 34.4 MPH, 39.4 MPH, and 49.1 MPH respectively.

 Although the average speed was decreased during the post speed campaign; there were few agencies that showed no change or even higher average speed. Reexamining those agencies with positive average speed during the post survey, we found that about 13 agencies selected sites with lower average speed than the posted speed limit. After eliminating those agencies with lower than the posted speed limit during pre survey period, the average speed reduction between pre and post surveys was improved.

Overall the enforcement data (such as total number of patrol hours and total citations) provided by the local agencies show modest reduction of average speed, they should be interpreted with caution since the selected indicators (e.g., cost per patrol hour, cost per citation, and citations written per X minutes) vary substantially across selected agencies. Here are examples of the data problems that we encounter when we were analyzing agency-specific data items:

- 1. Some grantees did not complete the required Pre, Mid, and Post Speed Surveys.
- 2. Some grantees did not keep the locations constant between the Pre, Mid and Post Surveys.
- 3. Most grantees did not keep constant the time of the day between the Pre, Mid and Post Surveys.
- 4. Some grantees reported different posted speed limits for the same location when reporting results from the Pre, Mid and Post Surveys.
- 5. Not all grantees completed surveys and campaigns on all four required enforcement locations.
- 6. Not all grantees completed six months of campaigns.

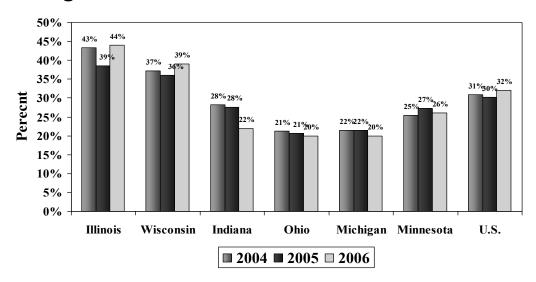
Problem Statement

Speeding is one of the most prevalent factors contributing to traffic crashes. The economic cost to society of speeding-related crashes is estimated by NHTSA to be \$40.4 billion per year. Nationally, in 2006, speeding was a contributing factor in 31 percent of all fatal crashes; and 13,543 lives were lost in speeding-related crashes. Also, alcohol involvement is prevalent for drivers involved in speed-related crashes. In 2006, 41 percent of the drivers who had a BAC of 0.08 or more involved in fatal crashes were speeding, compared with only 15 percent of the drivers with a .00 BAC involved in fatal crashes. Only 13 percent of speed-related fatalities occurred on interstate highways.

Based on the last three available years of FARS data, Illinois has the highest speed related fatalities among six Great Lake Region states. As shown in **Figure 1**, over 39 percent of fatalities in Illinois are speed related as compared to about 31 percent nationwide. It is also very interesting to note that the percent of speed related fatalities in Illinois has risen to a new high at 44.0 percent as compared to 32 percent nationwide in 2006.

Figure 1: Percent Speed Related Fatalities

Among Great Lakes States and US in 2004 - 2006



Source: Fatality Analysis Reporting System (FARS)

Description of Speed Enforcement Grant

In FY 2007, the Division of Traffic Safety (DTS) developed the Speed Enforcement Program (SEP) in order to increase speed enforcement activities in communities where speeding is a significant contributing factor in fatal and injury crashes. Many lives could be saved by changing public attitudes regarding risk taking behaviors such as speeding, impaired driving, and the non-use of occupant protection devices. It has been shown that highly visible enforcement programs focusing on these violations offer the greatest potential for changing these behaviors. Experience across the state and nation clearly demonstrates that keeping drivers within the posted speed limit is not possible in the absence of high visibility speed enforcement. The threat of serious injury and death is not adequate to encourage drivers, especially younger drivers to drive within the posted speed limits. As shown in the literature (NHTSA, 2006), the only way to get people to drive within the posted speed limits is through high visibility enforcement and the possibility of tickets and fines.

During the last five years, IDOT has implemented several other traffic safety programs such as "Click it or Ticket", and "You Drink & Drive. You Lose." that required a combination of paid/earned media and high visibility enforcement. These programs have been very successful in terms of increasing safety belt usage rates reducing alcohol related fatalities and injuries. For more information on these programs refer to our website at http://www.dot.il.gov/trafficsafety/tsevaluation.html.

Recognizing that speed has been a significant factor in fatalities and severe injuries, DTS decided to develop and fund a special speed program. Law Enforcement Liaison's (LEL) and DTS staff attended meetings, sent fliers in the mail, called agencies on the phone and emailed existing grantees to make law enforcement aware of the new grant.

Once the grant parameters had been determined and the amount of available funds agreed upon, the speed grant was offered to all local and county law enforcement agencies in the state. After the deadline for submission passed DTS staff reviewed the applications for approval or denial. Agencies were required to show statistical proof that a problem existed. They had to identify four locations within their jurisdiction where they would then conduct up to six months of targeted speed enforcement. Emphasis was placed on requesting agencies located within the 23-county model. The 23-county

model is based on the analysis that the Evaluation Unit within DTS conducted and concluded that 23 counties out of 102 counties in Illinois contain about 85 percent of population and 70 percent of fatalities as a result of motor vehicle crashes (see Appendix A).

Program Objectives of Speed Grant

The main goal of the SEP is to reduce the incidence of speeding related motor vehicle crashes, and the resulting injuries and fatalities, through highly visible increased enforcement of speed related laws. In order to achieve this goal, the following specific objectives have been defined:

- 1. To reduce the number of speed related traffic crashes.
- 2. To increase enforcement of speed laws.
- 3. To increase compliance with the posted speed limit.

Program Requirements

The 2007 Speed Enforcement Program (SEP) was conducted from September 2006 through August 2007. Forty-eight (48) counties and local law enforcement agencies that were selected for funding, participated in SEP campaign. **Appendix B** displays a map of Illinois counties with the number of projects and their locations. The funding agencies were required to accomplish the following tasks and activities during the funding period:

- 1. All selected agencies shall provide DTS quantifiable data showing speed a contributing factor in motor vehicle crashes in their jurisdictions.
- 2. Agencies shall identify four locations within their jurisdictions where they would then conduct up to six months of targeted enforcement for the specified hours spread throughout the enforcement period. The selected agencies must utilize only Illinois Law Enforcement Training Standards Board (ILETSB) certified enforcement trained police officers for overtime enforcement. Officers will be permitted and encouraged, to issue multiple citations to drivers who have committed several violations; such as, Speeding, DUI, other alcohol related, and failure to wear safety belt.

- 3. The primary program emphasis was placed on enforcement of speed related laws. The expectation was that a minimum of two (2) speeding related citations per patrol hour/officer were required to be written.
- 4. Each grantee shall submit speed surveys before, during and after the speed enforcement among four selected locations. All surveys must be, each time, conducted at the same time of day and day of the week when the majority of those crashes have occurred. Surveys may be conducted with radar or a speed trailer.
- 5. Throughout the campaign, information outlining all phases of the program shall be given to police department personnel, news media, and court (prosecutors and judges) personnel.
- 6. Each grantee must be registered and current on submittal of reports required under the Racial Profiling Law.
- 7. Each Agency should conduct a Public Information and Education (P. I. & E.) campaign as part of the grant.

Evaluation Methods

In this report both process and outcome evaluation methods were used to assess the effectiveness of the Speed Enforcement Program.

The process measures include descriptive analysis of enforcement activities across selected local enforcement agencies using the following enforcement and educational data items:

- Number of overtime hours
- Total citation issued
- Total speed related citations issued
- Number of citations issued per hour
- Total actual cost of enforcement
- Cost per citation (calculated by dividing total cost by total number of citations)
- Cost per speed-related citation (calculated by dividing total cost by total number of speed citations)

A cost/benefit analysis was performed by agency to determine the effectiveness of the speed program. The above two cost indicators (cost per citation and cost per speed-related citation) were used to determine: 1) cost effectiveness of the speed program across selected local enforcement agencies; and 2) performance level of the participating agencies. In addition, simple correlation analyses of cost per hour/cost per citation, and cost per hour/cost per speed citation along with scatter diagrams were performed to determine the strength of the relationship between cost and number of citations issued by the participating agencies.

The outcome measure used in this report to test failure/success of the speed program was change in average speed traveled through pre/post speed surveys. The pre and post speed surveys were conducted by the participating local agencies in pre-selected locations where the motorists tend to travel significantly above the posted speed limit. The average traveling speed during the post survey period after high visibility enforcement by local agencies was expected to be significantly lower than during the pre survey period. The speed surveys were conducted at the same road segments during the pre and post periods to permit comparisons and eliminate location differences. The local agencies attempted to get at least 100 speed samples from each site. At some

sites this was not reasonable due to low traffic volume. Data for each of the sites were collected on the same day of the week and during the same general time range for both pre and post survey periods. This was done as an attempt to minimize the effects that day of week or time of day would have on the study.

Data collection at each of the sites was done during pre and post speed enforcement periods. For a copy of the survey form refer to **Appendix C**.

Results of Media and Enforcement Activities among the Speed Grantees

Media

Media efforts are very important part of this grant. A public information and education facet was included in the grant specifications. Grantees were asked to focus media efforts with these emphases and report their efforts:

- Serious/certain enforcement (perception of risk).
- Injury prevention.
- Importance of obeying traffic laws.
- Cost of traffic ticket fines.
- Cost of traffic crash injuries and fatalities.
- Participation in media events.
- Displays (library, health providers, etc.), or
- Presentations (schools).

There were a total of 1,889 Public Information and Education media efforts conducted in coordination with the Speed Enforcement Program. These efforts consisted of press conferences, radio and television news stories, distribution of posters and fliers, banners, or web announcements.

Enforcement

As indicated earlier a total of 48 county and local agencies (see **Table 1**) were selected for funding to participate in the statewide speed program and conduct six enforcement campaigns. Specific locations of these projects were displayed in **Appendix B**.

Table 2 provides media and enforcement activities for the statewide speed enforcement program by campaign. The reported activities include traffic related citations, patrol hours, and public information and education (P.I. & E.) efforts for each campaign. The main enforcement indicators used to evaluate each agency's enforcement effort were:

- Number of overtime hours
- Total citation issued
- Total speed related citations issued
- Number of citations issued per hour

Table 1: Selected Speed Grantees in 2007									
Addison PD Clinton County SO Millstadt PD Roxana PD									
Algonquin PD	Cook County SO	Moline PD	Sangamon County SO						
Alton PD	East Moline PD	Monmouth PD	Schaumburg PD						
Arlington Heights PD	Elgin PD	New Athens PD	St. Charles PD						
Batavia PD	Fairmont City PD	Niles PD	Tazewell County SO						
Bellwood PD	Glendale Heights PD	Oak Brook PD	Waukegan PD						
Calumet City PD	Granite City PD	Ottawa PD	West Chicago PD						
Canton PD	Joliet PD	Pekin PD	Wheaton PD						
Carol Stream PD	Lemont PD	Peoria Heights PD	Wheeling PD						
Caseyville PD	Madison PD	Quincy PD	Will County SO						
Champaign PD	Maywood PD	Red Bud PD	Williamson County SO						
Chicago PD	McHenry County SO	Rock Island PD	Winnebago County SO						

Table 2:	Table 2: Overall Enforcement and Media Activities by Six Campaigns											
Activities	Campaign Cam											
Total Patrol												
Hours	5,486	6,128	4,764	5,205	5,152	5,416	32,150					
Total P.I.& E.'s	213	412	655	109	375	125	1,889					
Speeding	8,625	9,827	8,024	8,515	8,726	9,512	53,229					
Other Citations	2,164	2,393	2,076	1,759	1,880	1,728	12,000					
Total Citations	10,789	12,220	10,100	10,274	10,606	11,240	65,229					

The participating 48 county and local agencies worked a total of 32,150 hours and issued 65,229 citations, of which 53,229 (81.6%) were speeding citations. On average, law enforcement wrote one citation every 29.6 minutes. For more detail information on media and enforcement activities by agency refer to **Table 3 in Appendix D**.

Cost and Benefit Analysis

The following indicators were used to determine cost effectiveness of the enforcement efforts of the participating agencies:

- Total actual cost of enforcement
- Cost per citation (calculated by diving total cost by total number of citations)
- Cost per speed-related citation (calculated by dividing total cost by total number of speed citations)

Grantees were required to complete six overtime enforcement campaigns during the grant period. The emphasis was to be placed on speed enforcement with a primary objective of reducing average traveling speed. Grantees reported all citation data, by campaign, along with patrol hours for reimbursement.

The overall cost of the SEP campaign was \$1,539,661.43. Average cost per citation written was \$24.42. The average cost per patrol hour was \$46.33 (**see Table 4**). Agency-specific total enforcement hours, total enforcement costs, and total cost per patrol hour displayed in **Table 5 in Appendix D**.

Table 4: Speed Grantee Enforcement Activities and Associated Costs

Grantee	Total Costs	# Patrol Hours	Total Citations	Cost per Citation	Cost per Patrol Hour	Total Speed Citations	Cost per Speed Citation
Statewide	\$1,539,661.43	31,678.8	65,229	\$ 24.42	\$ 46.33	53,229	\$ 29.05

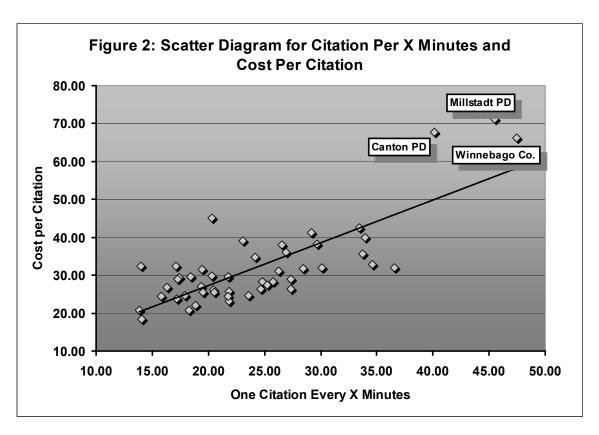
The primary program emphasis is to be placed on enforcement of speed related laws. The expectation is that a minimum of two (2) speeding related citations per patrol hour/officer will be issued. **Table 5** in **Appendix D** provides total citation, speed related citation and associated cost per hour of enforcement across 48 participating agencies.

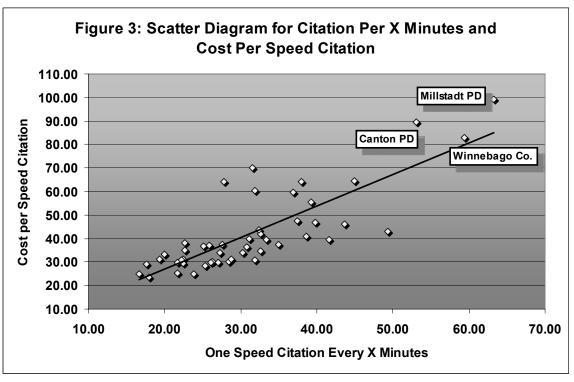
Of the total of 48 local agencies, only 11 agencies were able to issue speed citation for under 30 minutes (see **Table 6**).

Table 7: List of Agencies Which Met the Speed Citation Objective

Agency	Speed Citations every X min.
Arlington Heights PD Dept	24.97
Carol Stream PD Dept	25.24
Champaign PD	29.29
Glendale Heights PD Dept	30.00
Madison PD	29.88
Ottawa PD	25.04
Rock Island PD	23.52
Schaumburg PD	29.67
Wheaton PD	29.84
Wheeling PD	24.21
Williamson County Sheriff	28.99

Results of **Tables 6 and 7** reveal that not all the participating agencies provide cost effective enforcement activities since some of the agencies took longer than 30 minutes to issue a speed citation. In order to detect the agencies with high costs and low activities, a correlation analysis along with scatter diagram were performed. The following two Scatter diagrams (Figure 2 and Figure 3) show the relationship between the cost per citation and the total minutes took for an agency to write one citation. The first scatter diagram shows the relationship between cost and total citations and the second scatter diagram shows the relationship between cost and speed related citations. The overall correlations of cost/total citations and cost/speed related citations across 48 agencies are 0.86 and 0.78 respectively. These figures indicate that there is a strong positive relationship between total minutes taken to write one citation and associated average cost per citation. In other words, agencies that took a long time to write one citation tend to have higher average cost per citation. As shown in these graphs, a few agencies happened to have extreme values and are considered to be outliers. The DTS staff will contact these agencies to discuss the issues and find out what needs to be done to correct them.





Results of Pre and Post Speed Surveys

Table 8 in Appendix D shows average speed figures recorded by the participating local agencies during the pre and post speed surveys by selected posted speed limits. The posted speed limits consisted of seven categories ranging from 25 MPH to 55 MPH. The first column of this table depicts a list of local agencies within specific posted speed limits. Although all the agencies were supposed to select four locations for enforcement activities and survey activities, only 26 agencies stayed with the proposed plan of "four sites per project". Twenty two local agencies selected fewer than four locations to conduct speed surveys. The second column indicates the number of locations (road segments) each local agency conducted speed enforcement and selected for speed surveys. All the participating agencies were advised to select their sites based on their location specific data showing speed as a traffic safety problem. The third and fourth columns show average observed speed per mile before and after speed enforcement activities. The last column represents the change in observed speed per mile. The average speed change column is used to determine the success and failure of the participating agencies in reducing the average observed speed hour per mile. As expected, the majority of the local agencies selected road segments where the posted speed limits ranged from 30 MPH to 45 MPH. Previous studies (NHTSA 2006) show that the majority of traffic related crash injuries and fatalities as well as propertydamaged only crashes occur in rural and residential roads where the posted speed limits are between 30 and 45 MPH.

As shown in **Table 8**, overall the average speed of selected road segments was significantly higher than the posted speed limit. As expected the average observed speed among the majority of road segments selected for enforcement during pre survey was about 4.5 MPH higher than the posted speed limit categories. For example the average speeds for those road segments with posted speed limits of 30 MPH, 35 MPH, and 45 MPH were 34.4 MPH, 39.4 MPH, and 49.1 MPH respectively.

Comparing pre and post speed survey results, it was found that the overall average speed decreased after planned enforcement activities across selected posted speed limit categories. The following materials describe results of the pre and post speed surveys by posted speed limit categories.

- 1. The overall average speed decreased significantly during the post survey period after the major speed enforcement activities were conducted. As shown in Table 8, the change in speed varies across the participating agencies within the selected posted speed limit categories. Despite of the overall reduction in average speed, there were few agencies that showed an increase in average speed during the post survey. Among those agencies that showed an increase, 13 agencies had average speed below the posted speed limit during the pre survey. Eliminating these agencies form the analysis, the average speed change between pre and post surveys improved significantly. Table 9 depicts average speed before and after enforcement activities with and without those sites where the average speed was below the posted speed limits.
- 2. Within the sites with posted-speed limit of <u>25 MPH</u>, a total of five local agencies participated and conducted enforcement activities within nine sites. The average speed in these sites was reduced by 1.2 percent from 29.2 MPH during the pre enforcement period to 28 MPH during the post survey period. It should be noted that in contrary to our expectation, the average speed within the sites where the Maywood Police Department conducted speed surveys increased by over 2.8 MPH.
- 3. Within the posted speed limit of 30 MPH, a total of local 22 agencies conducted enforcement activities in 49 sites. Overall, there was about 1.2 MPH decrease in average speed during the post survey period. Among the 22 local agencies within this posted speed limit, only three agencies that had insignificant average speed increases during the post survey period. After eliminating those sites with the average speed below the posted speed limit, the speed reduction increased from 1.2 MPH to 1.66 MPH.
- 4. Within the posted speed limit of <u>35 MPH</u>, a total of 18 local agencies conducted enforcement and collected pre and post survey data. The average speed reduction among these agencies was about 2.7 MPH. Only three agencies showed an average speed increase during the post survey period. It is important to note that the average speed increase among these agencies was insignificant and below the posted speed limit of 35 MPH. Eliminating sites with an average

- speed lower than the posted speed limit increased the average speed change from 2.7 MPH to 3.3 MPH.
- 5. A total of three agencies conducted speed enforcement activities on five locations where the posted speed limit was <u>40 MPH</u>. The overall average speed decreased from 42.6 during the pre survey period to 40.9 MPH during the post survey period. In this speed posted limit category, Wheeling PD showed an increase of 7.1 MPH during the post enforcement activities.
- 6. For those locations where the posted speed limit was <u>45 MPH</u>, there was a reduction of 1.04 MPH after the enforcement activities of 23 local PD agencies. In this speed category, a few agencies experienced an increased average speed during the post enforcement period. Eliminating sites with an average speed lower than the posted speed limit increased the average speed change from 1.04 MPH to 1.7 MPH.
- 7. Within the posted speed limit of <u>50 MPH</u>, only three agencies conducted activities in five locations and showed an average speed reduction of about 1.3 MPH. In this speed category, there was only one site with an average speed below the posted speed limit. After eliminating this site, the average speed reduction increased from 1.3 MPH to 1.7 MPH.
- 8. Finally, a total of twelve agencies conducted speed enforcement activities within the 19 locations where the posted speed limit was <u>55 MPH</u> (Note: one of twelve sites had a posted speed limit of 65 MPH). As result of their efforts, the overall the average speed was reduced by 1.2 MPH after the speed enforcement activities. In this speed category, there was only one site with an average speed below the posted speed limit. After eliminating this site, the average speed reduction increased from 1.2 MPH to 1.4 MPH

Table 9: A	Table 9: Average Speed during Pre and Post Surveys and Average Speed												
	Differences by Selected Posted Speed Limits 20 or 25 MPH 30 MPH 35 MPH 40 MPH												
	Avg.	Avg. Speed Post		Avg.	Avg. Speed Post		Avg.	Avg. Speed Post		Avg. Speed Pre	Avg.	Avg. Chg	
Total	29.15	27.96	-1.19	34.50	33.35	-1.15	39.35	36.71	-2.64	42.64	40.89	-1.75	
Total (Excluding sites with lower than their associated posted	29.15	27.96	-1.19	36.46	34.80	-1.66	40.27	36.97	-3.30	44.92	40.97	-3.95	
speed limits)													
		45 MPH			50 MPH		55	or 65 M	PH				
	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg				
Total	49.11	48.06	-1.05	55.54	54.28	-1.26	59.69	58.49	-1.20				
Total (Excluding sites with lower than their associated posted speed limits)	50.75	49.33	-1.42	57.06	55.39	-1.67	59.98	58.57	-1.41				

Discussion and Limitations of Data

Results of pre and post speed surveys among 48 participating agencies show a reduction in the average speed after speed enforcement activities. Although overall the average speed was decreased during the post speed campaign, there were few agencies that showed no change or even higher average speed. Reexamining those agencies with positive average speed during the post survey, we found out that about 13 agencies had sites with lower average speed than the posted speed limit. After eliminating those agencies with lower than the posted speed limit during pre survey periods our average speed reduction between pre and post surveys improved.

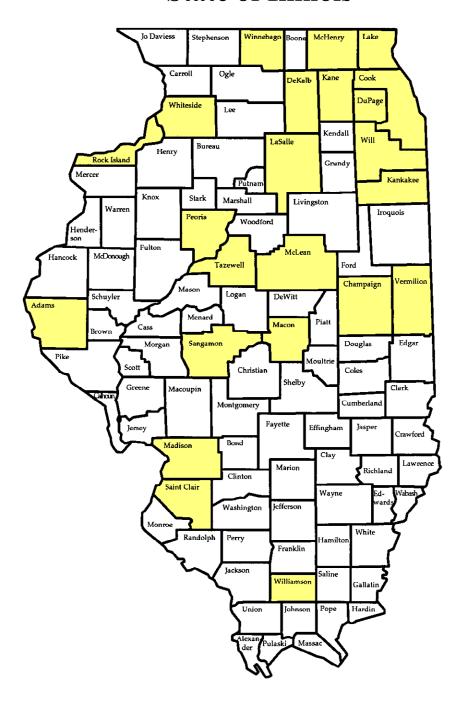
Overall the enforcement data (such as total number of patrol hours and total citations) provided by the local agencies show significant improvement in reduction of average speed, they should be interpreted with caution since the calculated indicators, such as

cost per patrol hour or cost per citation, and/or citations written per X minutes vary substantially across selected agencies.

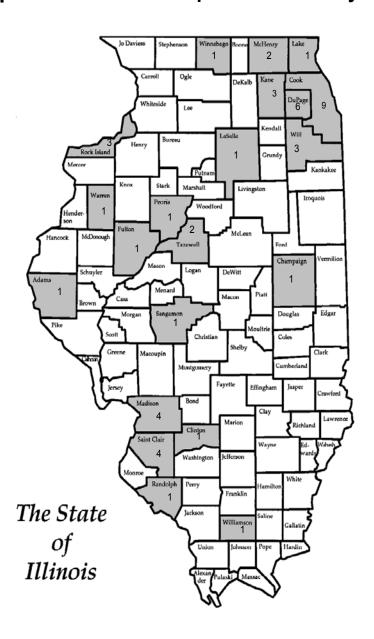
- 7. Some grantees did not complete the required Pre, Mid, and Post Speed Surveys.
- 8. Some grantees did not keep the locations constant between the Pre, Mid and Post Surveys.
- 9. Most grantees did not keep constant the time of the day between the Pre, Mid and Post Surveys.
- 10. Some grantees reported different posted speed limits for the same location when reporting results from the Pre, Mid and Post Surveys.
- 11. Some grantees did not complete surveys and campaigns on four locations.
- 12. Some grantees did not complete six months of campaigns.

Appendix A: 23-County Model

State of Illinois



Appendix B: FY 2007 Speed Grantees by County



Appendix C: Speed Program Survey Form



Speed Enforcement Program Speed Survey

City/County:				Project Number:				
Survey Date:		Start Time:	End Time:					
☐ Before Proj	ject Survey	Year) Survey	☐ Final (After)	Survey	Post	ed Speed Limit:	-	
Survey Location	on:							
Officer Name	and ID:							
Total Number	of Vehicles Obs	served:						
conducted for	one (1) hour a	t each selected	patrol location,	utilizing an unm				
Vehicle Obs	erved Speed	Vehicle Obs	erved Speed	Vehicle Obse	erved Spe	eed Vehicle Observed Speed		
Vehicle Observed Speed Vehicle Number Speed		Vehicle Number	Speed	Vehicle Number	Speed	d	Vehicle Number	Speed
1		26		51			76	
2		27		52			77	
3		28		53			78	
4		29		54			79	
5		30		55			80	
6		31		56			81	
7	urvey Date: Star Before Project Survey During (Mid Year) urvey Location: fficer Name and ID: otal Number of Vehicles Observed: dicate speed in the appropriate block. Use one Interest of the producted for one (1) hour at each selected patrol prection of traffic and stationary radar/lidar unit or a stationary radar/lidar unit or			57			82	
8		33		58			83	
9		34		59			84	

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Appendix D:

Associated Tables

(Tables 3, 5, 6, and 8)

Table 3: FY07 SPEED CAMPAIGN PROJECT DATA SUMMARY

Speed "Overtime" Enforcement

Type of Citation	1	2	3	4	5	6	Total
DUI	9	14	6	6	10	5	50
Safety Belt	298	379	564	324	359	289	2,213
Child Safety Seat	22	41	36	14	18	26	157
Felony	5	4	10	8	7	6	40
Stolen Vehicles	1	1	2	0	0	1	5
Fugitives	66	54	50	45	48	47	310
Suspended License	254	260	198	226	248	233	1,419
Uninsured	562	613	535	440	527	480	3,157
Speeding	8,625	9,827	8,024	8,515	8,726	9,512	53,229
Reckless Driving	11	7	1	0	1	59	79
Drug Arrest	14	33	10	10	9	7	83
Other	922	987	664	686	653	575	4487
Vehicles Stopped	9,785	11,168	9,380	9,770	9,912	9,791	59,806
Totals	10,789	12,220	10,100	10,274	10,606	11,240	65,229

Regular Non-Overtime Patrol

Type of Citation	1	2	3	4	5	6	Total
Speeding	3,948	4,917	4,963	3,927	4,599	5,513	27,867
Other Moving Viol.	6,231	5,705	8,147	7,632	10,258	9,350	47,323
DUI	335	406	412	383	373	370	2,279
Alcohol Related	224	252	216	197	199	189	1,277
Safety Belt	435	770	1,127	1,469	935	955	5,691
Child Restraint	56	221	133	94	36	55	595
Safety Belt W/Warn.	51	46	35	24	10	44	210
Child Rest. W/Warn.	4	6	5	0	0	1	16
Regular Enf. Total	11,284	12,323	15,038	13,726	16,410	16,477	85,258

SUMMARY DATA

	1	2	3	4	5	6	Total
Total Patrol Hours	5,486.0	6,128.0	4,763.8	5,205.0	5,151.5	5,415.5	32,149.8
Total P.I.& E.'s	213.0	412.0	655.0	109.0	375.0	125.0	1,889.0

Table 5: Total Enforcement Cost, Total
Patrol Hours and Cost per Patrol Hour by
Agency

Patrol Cost Per						
Agency	Total Cost	Hours	Patrol Hour			
Addison Police Department	\$10,160.11	243	\$41.81			
Algonquin	\$19,085.92	337	\$56.63			
Alton Police Department	\$49,379.06	1,150	\$42.96			
Arlington Heights Police Dept	\$36,670.30	640	\$57.30			
Batavia Police Department	\$40,084.97	585	\$68.58			
Bellwood Police Department	\$7,049.18	151	\$46.68			
Calumet City Police	\$68,593.17	1,304	\$52.60			
Canton Police Department	\$3,451.53	97	\$35.58			
Carol Stream Police Department	\$24,933.81	485	\$51.41			
Casewille Police Department	\$4,756.10	84	\$56.62			
Champaign Police Department	\$18,946.70	412	\$45.99			
Chicago Police Department	\$118,913.59	1,878	\$63.32			
Clinton County Sheriff	\$9,342.30	220	\$42.47			
Cook County Sheriff	\$196,269.22	3,859	\$50.86			
East Moline Police Department	\$38,454.50	1,082	\$35.54			
Elgin Police Department	\$36,454.50	556	\$43.28			
Fairmont City Police	\$15,079.81	580	\$26.00			
	. ,					
Glendale Heights Police Dept Granite City Police Dept	\$3,406.06 \$32,298.55	60 671	\$56.77 \$48.13			
Joliet Police Department	\$52,296.55 \$51,600.93	918	-			
Lemont Police Department	\$51,600.93 \$16,153.61	342	\$56.21			
Madison Police Department		909	\$47.23 \$43.62			
•	\$39,653.75					
Maywood Police Department	\$20,350.51	436 469	\$46.68			
McHenry County Sheriff	\$23,848.43	38	\$50.85			
Millstadt Police Department Moline Police Department	\$1,455.09 \$47,415.00	1,075	\$38.29 \$44.11			
Monmouth Police Department	\$17,556.86	495	\$35.47			
New Athens Police Department	\$1,879.96	60				
Niles Police Department	\$40,552.33	714	\$31.60			
Oak Brook Police	\$17,194.46	340	\$56.80 \$50.57			
Ottawa Police Department	\$7,669.24	192				
Pekin Police Department	\$31,834.73	859	\$39.94			
Peoria Heights Police Dept	\$16,685.02	447	\$37.06 \$37.33			
Quincy Police Department	\$23,963.94	576	\$41.60			
Red Bud Police Department	\$2,048.80	76	\$26.96			
Rock Island Police Department	\$9,908.87	217	\$45.71			
Roxana Police Department	\$16,708.44	467	\$35.78			
			\$40.99			
Sangamon County Sheriff Schaumburg Police Department	\$47,875.34	1,168				
	\$27,344.00	501	\$54.58			
St. Charles Police Department	\$21,482.20	400	\$53.71			
Tazewell County Sheriff's Dept	\$58,248.00	1,303	\$44.70			
Waukegan Police Department	\$28,004.00	721	\$38.84			
West Chicago Police Department	\$60,990.00	1,106	\$55.17 \$52.42			
Wheating Police Department	\$38,315.38	731	\$52.42			
Wheeling Police Department	\$30,031.11	561	\$53.53			
Will County Sheriff	\$91,607.69	1,476	\$62.06			
Williamson County Sheriff	\$7,277.87	200	\$36.39			
Winnebago County Sheriff	\$21,065.82	490	\$42.99			
Total	\$1,539,661.43	31,679	\$46.33			

Table 6: Citations and their Associated Costs by Agency					
Agency	Cost Per	One Citation	Cost per Speed	Speed Citations	
	Citation	Every X min	Citation	Written X Minutes	
Addison PD	26.53	38.07	44.96	64.51	
Algonquin PD	33.72	35.72	38.64	40.93	
Alton PD	19.39	27.09	22.43	31.34	
Arlington Heights PD	23.55	24.66	23.84		
Batavia PD	36.57	32.00	49.31	43.14	
Bellwood PD	20.43	26.26	31.05		
Calumet City PD	18.27	20.84	26.33		
Canton PD	40.13	67.67	53.10		
Carol Stream PD	18.83	21.98	21.63		
Caseyville PD	30.10	31.90	43.63		
Champaign PD	19.53	25.48	22.45		
Chicago PD	34.61	32.79			
Clinton County SO	29.19	41.25	39.25		
Cook County SO	21.82	25.74	30.77		
East Moline PD	17.44	29.44	22.59		
Elgin PD	17.16	23.79			
Fairmont City PD	14.00	32.31	27.82	64.21	
Glendale Heights PD	21.83	23.08	28.38		
Granite City PD	20.49	25.55	27.30		
Joliet PD	24.68	26.34	34.98		
Lemont PD	33.44	42.48	37.39		
Madison PD	17.90	24.62	21.73		
Maywood PD	29.67	38.13			
McHenry County SO	33.92	40.03	39.75		
Millstadt PD	45.47	71.25	63.26		
Moline PD	21.79	29.64	27.57	37.50	
Monmouth PD	23.07	39.03	37.92		
New Athens PD	17.09	32.45	31.86		
Niles PD	27.34	28.89			
Oak Brook PD	26.25	31.15			
Ottawa PD	13.87	20.83		25.04	
Pekin PD	19.46	31.50			
Peoria Heights PD	18.42	29.60			
Quincy PD	24.18	34.87	25.82	37.24	
Red Bud PD	20.29	45.15			
Rock Island PD	14.10	18.50			
Roxana PD	17.26	28.95			
Sangamon County SO	20.32	29.75			
Schaumburg PD	25.72	28.28			
St. Charles PD	28.45	31.79			
Tazewell County SO	26.88	36.08			
Waukegan PD	15.80	24.41	22.64		
West Chicago PD	25.27	27.48	28.77	31.29	
Wheaton PD	24.82	28.41	26.06	29.84	
Wheeling PD	21.79	24.43	25.32	28.38	
Will County SO	27.34	26.43	31.87	30.81	
Williamson County SO	16.32	26.91	17.58	28.99	
Winnebago County SO	47.45	66.22	59.34	82.82	

Table 8: Pre/Post Average Speed By Posted Speed Limit and By Agency

Agency	# of	Posted Speed Limit 20 or 25		
	Locations	Pre	Post	Chg
Lemont Police Dept (25)	2	29.12	25.05	-4.07
Madison Police Dept (25)	1	28.11	27.86	-0.25
Maywood Police Dept (25)	2	28.90	31.74	2.84
Ottawa Police Dept (20 mph)	1	24.72	22.36	-2.36
Peoria Heights Police Dept (25)	1	35.18	31.90	-3.28
Agency	# of	Posted Sp	eed Limit 3	
	Locations	Pre	Post	Chg
Addison Police Dept	1	33.00	36.00	3.00
Alton Police Dept	6	25.50	27.17	1.67
Arlington Heights Police Dept	1	30.96	29.23	-1.73
Batavia Police Dept	1	30.84	27.18	-3.66
Bellwood Police Dept	2	36.09	34.06	-2.03
Canton Police Dept	4	32.64	32.41	-0.23
Caseyville Police Dept	2	39.06	39.06	0.01
Champaign Police Dept	1	32.00	30.32	-1.68
Chicago Police Dept	8	41.82	38.51	-3.31
Joliet Police Dept	1	33.26	34.94	1.68
Madison Police Dept	1	34.13	33.80	-0.33
Millstadt Police Dept	3	28.47	28.72	0.25
Moline Police Dept	1	39.50	32.76	-6.74
Monmouth Police Dept	1	37.47	34.20	-3.27
Ottawa Police Dept	2	35.33	34.73	-0.60
Peoria Heights Police Dept	1	35.27	32.01	-3.26
Quincy Police Dept	2	30.85	30.31	-0.54
Red Bud Police Dept	2	30.38	32.27	1.89
Rock Island Police Dept	2	33.24	34.20	0.96
St. Charles Police Dept	2	39.85	36.49	-3.36
Waukegan Police Dept	2	41.61	33.77	-7.84
Will County Sheriff	3	35.95	35.72	-0.23

Table 8: (Continued)

Agency	# of	Posted Speed Limit 35 MPH		
	Locations	Pre	Post	Chg
Algonquin Police	1	43.08	38.61	-4.47
Arlington Heights Police Dept	3	36.60	34.90	-1.70
Batavia Police Dept	1	34.12	35.49	1.37
Champaign Police Dept	3	39.67	35.27	-4.40
East Moline Police Dept	2	32.00	32.00	0.00
Granite City Police Dept	3	40.18	36.22	-3.96
Joliet Police Dept	3	37.10	37.12	0.02
Madison Police Dept	1	35.11	34.99	-0.12
Maywood Police Dept	1	37.87	35.37	-2.50
Niles Police Dept	4	42.77	39.08	-3.70
Oak Brook Police	1	40.96	42.20	1.24
Pekin Police Dept	2	38.85	35.74	-3.11
Roxana Police Dept	1	38.06	38.06	0.00
St. Charles Police Dept	1	42.96	36.37	-6.59
Waukegan Police Dept	1	48.17	39.80	-8.37
Wheaton Police Dept	1	39.53	38.47	-1.06
Wheeling Police Dept	1	42.20	40.05	-2.15
Williamson County Sheriff	1	44.41	36.14	-8.27
Agency	# of	Posted Speed Limit 40 MPH		
	Locations	Pre	Post	Chg
Fairmont City Police	2	47.58	40.67	-6.91
Pekin Police Dept	1	43.32	42.84	-0.48
Wheeling Police Dept	2	37.35	40.13	2.78

Table 8: (Continued)

Agency	# of	Posted Speed Limit 45 MPH		
	Locations	Pre	Post	Chg
Algonquin Police	1	50.77	47.87	-2.90
Batavia Police Dept	2	44.15	43.33	-0.82
Carol Stream Police Dept	1	52.74	50.26	-2.48
Caseyville Police Dept	2	53.90	54.59	0.69
Cook County Sheriff	2	54.09	48.91	-5.18
East Moline Police Dept	2	35.00	36.50	1.50
Elgin Police Dept	1	50.10	60.36	10.26
Fairmont City Police	1	44.72	44.92	0.20
Glendale Heights Police Dept	1	46.90	47.36	0.46
Lemont Police Dept	2	46.78	45.25	-1.53
Madison Police Dept	1	44.69	44.14	-0.55
McHenry County Sheriff	1	50.64	47.99	-2.65
Monmouth Police Dept	1	53.09	54.11	1.02
Peoria Heights Police Dept	2	50.52	48.61	-1.91
Roxana Police Dept	2	50.64	50.70	0.05
Sangamon County Sheriff	3	52.41	50.23	-2.18
Schaumburg Police Dept	1	48.62	50.05	1.43
Waukegan Police Dept	1	55.93	48.97	-6.96
West Chicago Police Dept	2	49.63	47.13	-2.50
Wheaton Police Dept	1	46.98	46.60	-0.38
Wheeling Police Dept	1	50.60	49.92	-0.68
Williamson County Sheriff	1	46.90	46.68	-0.22
Winnebago County Sheriff	1	51.16	46.17	-4.99

Table 8: (Continued)

Agency	# of	Posted Speed Limit 50 MPH		
	Locations	Pre	Post	Chg
Elgin Police Dept	2	59.54	56.23	-3.30
Monmouth Police Dept	2	54.58	54.55	-0.03
West Chicago Police Dept	1	49.48	49.87	0.39
Agency	# of	Posted Speed Limit 55 or 65		
	Locations	Pre	Post	Chg
Clinton County Sheriff (55)	1	62.42	61.44	-0.98
Cook County Sheriff (55)	2	56.76	55.31	-1.45
Elgin Police Dept (55)	1	64.30	62.54	-1.76
Fairmont City Police (55)	1	64.98	66.75	1.77
McHenry County Sheriff (55)	2	59.75	55.49	-4.27
Millstadt Police Dept (55)	1	55.35	57.75	2.40
Oak Brook Police (55)	1	61.96	62.68	0.72
Tazewell County Sheriff (55)	4	56.27	56.78	0.51
Roxana Police Dept (65 MPH)	1	68.15	66.79	-1.36
Will County Sheriff (55)	1	60.33	58.17	-2.16
Williamson County Sheriff (55)	2	58.81	56.94	-1.87
Winnebago County Sheriff (55)	2	60.47	56.34	-4.13